

Appln No. 09/939,527
Reply to Office Action of 03/31/2003

REMARKS

The above-identified application has been carefully reviewed in light of the Examiner's communication mailed March 31, 2003.

Claim 1 has been amended to make clear that the additive component is distributed substantially throughout the matrix material. Claim 14 has been amended, as impliedly suggested by the Examiner, to make clear that the composition is substantially solid. Claim 22 has been amended to incorporate the subject matter of claim 23, which has been canceled, without prejudice. Claim 31 has been amended to incorporate the subject matter of claim 32, which has been canceled, without prejudice. Claims 33 to 43 have been canceled, without prejudice, as being drawn to one or more non-elected inventions. New claims 44 to 45 have been added and are directed to embodiments for which patent protection is sought. Each of these amendments and new claims is fully supported by the above-identified application as originally filed.

In view of the amendments to claim 14, applicant submits that this claim satisfies the requirements of 35 U.S.C. 112, second paragraph. Therefore, applicant requests that the rejection of claim 14 based on this statutory provision be withdrawn.

Claims 1 to 11, 13 and 15 to 26 have been rejected under 35 U.S.C. 102(b) as being anticipated by Mitchell et al (5,741,433). Claims 12, and 27 to 32 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell et al. Applicant traverses each of the rejections as it pertains to the present claims.

The present invention is directed to coolant additive compositions and methods of producing additive compositions for providing benefits to coolants.

In independent claim 1, coolant additive compositions are provided which comprise a matrix material and an additive component. The additive component is distributed substantially throughout the matrix material and is effective, when released to

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a coolant; to provide at least one benefit to the coolant. The matrix material is effective to reduce the rate of release of the additive component into the coolant relative to an identical composition without the matrix material.

In independent claim 22, coolant additive compositions are provided which comprise a sustained release component and an additive component. The additive component is effective to provide at least one benefit to a coolant when released into the coolant. The sustained release component is partially soluble in the coolant and is effective to reduce the rate of release of the additive component into the coolant relative to an identical composition without sustained release component. Further, the sustained release component includes a portion which is soluble in the coolant and is effective, when released into the coolant, to provide at least one benefit to the coolant. In effect, the sustained release component of claim 22 is effective to reduce the rate of release of the additive component into the coolant and, in addition, to provide at least one benefit to the coolant when the soluble portion of the sustained release component is released into the coolant.

In independent method claim 27, methods for producing an additive composition for providing a benefit to a coolant comprise the steps of combining an additive component with a matrix material to form a mixture; and forming one or more discrete units of the mixture. The additive component is effective to provide at least one benefit to the coolant when released into the coolant, and the matrix material comprises a polymeric material. When one or more discrete units are contacted with a coolant, the matrix material is present in an amount effective to reduce the rate of release of the additive component into the coolant.

In independent method claim 31, methods of producing additive compositions for providing a benefit to the coolant comprise

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providing an additive composition and providing a coating material on the additive composition to form a coated additive composition. The coating material is partially coolant soluble and effective, when the coated additive composition is contacted with the coolant, to reduce the rate of release of the additive composition into the coolant relative to identical additive compositions without the coating material. Further, the coating material includes a portion which is soluble in the coolant and is effective, when released into the coolant, to provide at least one benefit to the coolant.

Mitchell et al discloses a controlled release coolant additive including a core containing a coolant additive composition and a coating material encapsulating the core. Mitchell et al discloses that when the coating material dissolves in the coolant, the dissolved coating contaminates or fouls the system which is being treated. Mitchell et al discloses that the coating material should not dissolve appreciably in the coolant to avoid contaminating or fouling the cooling system.

Mitchell et al does not disclose, teach or suggest the present invention. For example, Mitchell et al does not disclose, teach or even suggest a coolant additive composition comprising any matrix material and an additive component with the additive component being distributed substantially throughout the matrix material, as recited in claim 1, or methods of making matrix material/additive component compositions, as recited in claim 27. The entire purpose of Mitchell et al is directed to coated additives in which the coating material encapsulates the core of water soluble coolant additive. Such a coated object or particle is entirely different and distinct from the present coolant additive composition comprising a matrix material and an additive component, as recited in independent claims 1 and 27.

In view of the above, applicant submits that claims 1 to 21 and 27 to 30 are not anticipated by and are unobvious from and

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patentable over Mitchell et al under 35 U.S.C. 102(b) and 103(a).

With regard to independent claim 22, Mitchell et al does not disclose, teach or even suggest a partially soluble sustained released component effective to reduce the rate of release of the additive component into the coolant and including a soluble portion effective, when released into the coolant, to provide at least one benefit to the coolant, as recited in this claim. To the contrary, Mitchell et al directly and expressly seeks to avoid the use of soluble coatings. Importantly, Mitchell et al does not even suggest any benefit to the coolant with the minor, soluble portion of the coating disclosed in this reference. To the contrary, Mitchell et al discloses such soluble coating portion as being detrimental, for example, causing contamination and fouling to the cooling system which is being treated. Thus, to a large extent, Mitchell et al actually teaches away from present compositions as recited in claim 22 and the methods of making such compositions, as recited in independent claim 31.

In view of the above, applicant submits that claims 22 and 24 to 31 are not anticipated by and are unobvious from and patentable over Mitchell et al under 35 U.S.C. 102(b) and 103(a).

With regard to new claims 44 and 45, applicant submits that Mitchell et al does not disclose, teach or suggest the invention claimed. For example, Mitchell et al does not disclose, teach or even suggest a coolant additive composition comprising a sustained release component including both a matrix and a coating, and an additive component effective to provide at least one benefit to a coolant when released into the coolant, as recited in independent claim 44. As noted previously, Mitchell et al does not disclose, teach or even suggest using a matrix material as a sustained release component. Thus, it is clear that Mitchell et al does not even suggest using a combination of a matrix and a coating in a sustained release component, as recited in new independent claim

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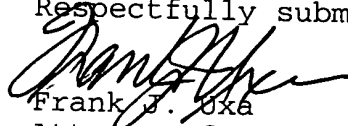
44.

In view of the above, applicant submits that new claims 44 and 45 are not anticipated by and are unobvious from and patentable over Mitchell et al under 35 U.S.C. 102(b) and 103(a).

Each of the present dependent claims is separately patentable over the prior art. For example, the prior art does not disclose, teach or even suggest any of the present compositions and methods including the additional feature or features recited in any of the present dependent claims. Therefore, applicant submits that each of the present claims is separately patentable over the prior art.

In conclusion, applicant has shown that the present claims satisfy the requirements of 35 U.S.C. 112, and are not anticipated and are unobvious from and patentable over the prior art under 35 U.S.C. 102 and 103. Therefore, applicant submits that the present claims, that is claims 1 to 22, 24 to 31, 44 and 45 are allowable and respectfully requests the Examiner to pass the above-identified application to issuance at an early date. Should any matters remain unresolved, the Examiner is requested to call (collect) applicant's attorney at the telephone number given below.

Respectfully submitted,



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